



UNITED STATES PATENT AND TRADEMARK OFFICE

326
UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/473,571	12/28/1999	GILBERT WOLRICH	10559/128001	1159
20985	7590	06/30/2004	EXAMINER	
FISH & RICHARDSON, PC 12390 EL CAMINO REAL SAN DIEGO, CA 92130-2081			ENGLAND, DAVID E	
			ART UNIT	PAPER NUMBER
			2143	20
DATE MAILED: 06/30/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/473,571	WOLRICH ET AL.	
	Examiner	Art Unit	
	David E. England	2143	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 22 March 2004.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-37 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 19.
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____.

DETAILED ACTION

1. Claims 1 – 32 are presented for examination.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1, 9, 18, 28, 33, 34 and 36 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The limitation of, “media access control device”, is not specifically found in the specification.
3. Claims 33 and 35 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The limitation of, “multiple multi-threaded programmable processing engines”, is not specifically found in the specification.
4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

Art Unit: 2143

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1 – 3, 6 – 8, 10, 14, 21 – 23 and 31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. Claim 1 states, “received packet data”, and “transfers of data packets”. It is uncertain if the Applicant means for these terms to have the same meaning. Clarification and/or an amendment are requested to overcome this rejection.

7. Claim 2 states, “one or more input transfer registers to receive the unsolicited transfers of status data for use to schedule the transfers of data packets.” It is unclear as to how this transfer can occur because it is not stated as to how or where the “input transfer registers” are connected in the processing engines.

8. Claims 3, 6 – 8, 10, 14, 21 – 23 and 31 recites the limitation “the device”. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

-
10. Claims 1 – 5, 7 – 11, 13, 14, 16, 17 and 33 – 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Isfeld et al. U.S. Patent No. 5592622 (hereinafter Isfeld) in view of Chilton et al. U.S. Patent No. 6418488 (hereinafter Chilton) in further view of Witkowski et al. (6430626) (hereinafter Witkowski).
11. Referencing claim 1, as closely interpreted by the Examiner, Isfeld teaches a processor, comprising:
12. media access control device, (e.g. col. 7, lines 10 – 48, “*MAC device*”);
13. one or more processing engines to schedule transfers of data packets between the processor and the devices, (e.g. col. 8, line 50 – col. 9, line 15);
14. a push engine to perform unsolicited transfers of the status data to the processing engines in response to the module collecting new status data, (e.g. col. 8, lines 11 – 34 & col. 10, line 12 – col. 11, line 67 & col. 23, line 45 – col. 24, line 15). Isfeld does not specifically teach a module configured to collect status data from devices connected to a bus, the status data indicating readiness of the devices to participate in data transfers,
15. the status data comprising data indicating whether one of the media access control devices has received packet data. Chilton teaches a module configured to collect status data from devices connected to a bus, the status data indicating readiness of the devices to participate in data transfers, (e.g. col. 25, lines 18 – 59). It would have been obvious to one skilled in the art at the time the invention was made to combine Chilton with Isfeld because if one device does not receive a type of status data (i.e. acknowledgement

signal), transfer errors could accumulate in the system. Witkowski teaches the status data comprising data indicating whether one of the media access control devices has received packet data, (e.g. col. 20, line 45 – col. 21, line 28, “*The RX MCB interface 530 asserts a signal RX_PKT_AVAIL* to the MCB 404 when packet data is in one of the RX BUFS 520, 522...* ”). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Witkowski with Isfeld and Chilton because by sending a status data indicating that a media access control device has received a packet allows the system to ready the packet for processing and/or transmission to other devices in the system.

16. As per claim 2, Isfeld teaches wherein the processing engine comprises:
17. one or more input transfer registers to receive the unsolicited transfers of status data for use to schedule the transfers of data packets, (e.g. col. 23, line 45 – col. 24, line 15).
18. As per claim 3, Isfeld teaches wherein the processing engine uses a portion of received new status data to schedule retrievals of data packets from the devices, (e.g. col. 10, line 46 – col. 11, line 46).
19. As per claim 4, Isfeld teaches wherein the processing engine uses a portion of the received status data to schedule transmissions of data packets, (e.g. col. 10, line 46 – col. 11, line 46).

20. As per claim 5, Isfeld teaches wherein the processing engine uses a portion of the received status data to determine whether schedule transmissions of data packets have been completed, (e.g. col. 18, lines 23 – 61).

21. As per claim 7, Isfeld teaches wherein a portion of the status data are flags indicative of whether associated devices have data packets to transmit, (e.g. col. 36, line 50 – col. 37, line 25).

22. As per claim 8, Isfeld and Chilton do not specifically teach wherein a portion of the status data includes flags indicative of whether associated devices have space to receive data packets. Witkowski teaches wherein a portion of the status data includes flags indicative of whether associated devices have space to receive data packets, (e.g. col. 11, line 52 – col. 12, line 23, “*...status bits on a respective one of the BUF_AVAIL[5:0]* signals to indicate whether each of its corresponding transmit FIFOs 304 for the respective port has enough empty space available to store data.*”). It would have been obvious to one skilled in the art at the time the invention was made to combine Witkowski with the combine system of Isfeld and Chilton because this could prevent incoming status data to be written over the status data that already exists in the space provided.

23. As per claim 14, Isfeld and Chilton do not specifically teach wherein collecting further comprises:

24. polling the devices for ready status data on the availability of ports thereon; and

25. receiving ready status data associated with individual ones of the devices in response to the polling. Witkowski teaches wherein collecting further comprises:
 26. polling the devices for ready status data on the availability of ports thereon, (e.g. col. 17, lines 33 – 58); and
 27. receiving ready status data associated with individual ones of the devices in response to the polling, (e.g. col. 17, lines 33 – 58). It would have been obvious to one skilled in the art at the time the invention was made to combine Witkowski with the combine system of Isfeld and Chilton because if there are all ports are in use at the time the system cannot receive any data. Therefore, this would prevent bottlenecking.
-
28. As per claim 16, Isfeld and Chilton do not specifically teach wherein the transferred portion of the information includes flags that indicate whether associated ports of the devices have one of space to receive data packets and data packets ready to transmit over the bus. Witkowski teaches wherein the transferred portion of the information includes flags that indicate whether associated ports of the devices have one of space to receive data packets and data packets ready to transmit over the bus, (e.g. col. 22, line 36 – col. 23, line 14 & col. 23, line 48 – col. 24, line 23). It would have been obvious to one skilled in the art at the time the invention was made to combine Witkowski with the combine system of Isfeld and Chilton because if there are all ports are in use at the time the system cannot receive any data. Therefore, this would prevent bottlenecking and packet collision.

29. As per claim 34, as closely interpreted by the Examiner, Isfeld teaches the at least one media access control device comprises an Ethernet media access control device, (e.g. col. 7, lines 29 – 60).

30. As per claim 37, Isfeld teaches at least one memory controller to a Synchronous Dynamic Random Access Memory (SDRAM), (e.g. col. 11, line 57 – col. 12, line 20).

31. Claims 9, 10, 11, 13, 17, 33, 35, and 36 are rejected for similar reasons as stated above.

32. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Isfeld (5592622) in view of Chilton (6418488) in further view of Witkowski (6430626) in further view of Williams et al. (6144669) (hereinafter Williams).

33. As per claim 6, Isfeld, Chilton and Witkowski do not specifically teach wherein the module is configured to poll the devices for the status data over a second bus. Williams teaches wherein the module is configured to poll the devices for the status data over a second bus, (e.g. col. 5, lines 29 – 59 & col. 11, lines 4 – 38). It would have been obvious to one skilled in the art at the time the invention was made to combine Williams with the combine system of Isfeld, Chilton and Witkowski because having the status data over a second bus could speed up a process and prevent latency and packet collision.

Art Unit: 2143

34. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Isfeld (5592622) in view of Chilton (6418488) in further view of Witkowski (6430626) in further view of Vaidya (6279113).

35. As per claim 12, Isfeld, Chilton and Witkowski do not specifically teach wherein determining includes comparing a value of a time stamp transferred with the information to a previous value of the time stamp. Vaidya teaches wherein determining includes comparing a value of a time stamp transferred with the information to a previous value of the time stamp, (e.g. col. 12, lines 11 – 22). It would have been obvious to one skilled in the art at the time the invention was made to combine Vaidya with the combine system of Isfeld, Chilton and Witkowski because if one desired to save an updated status data the comparisons of the time stamp would allow for this function to take place. Therefore, leading to possible error prevention from the system accessing obsolete information.

36. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Isfeld (5592622) in view of Chilton (6418488) in further view of Vaidya (6279113) in further view of Witkowski (6430626).

37. As per claim 15, Isfeld, Chilton and Vaidya do not specifically teach wherein collecting further comprises:

38. writing the received ready status data to a status register;

Art Unit: 2143

39. scheduling transfers of data packets over the bus in response to the transferred portion of the ready status data. Witkowski teaches wherein collecting further comprises:

40. writing the received ready status data to a status register, (e.g. col. 34, line 45 – col. 35, line 25);

41. scheduling transfers of data packets over the bus in response to the transferred portion of the ready status data, (e.g. col. 17, lines 33 – 58). It would have been obvious to one skilled in the art at the time the invention was made to combine Witkowski with the combine system of Isfeld, Chilton and Vaidya because it would be more efficient to write received ready status data to a status register and if one wanted to transfer a type of response to the status data (i.e. acknowledgement) it would be more efficient for to transfer a portion of the status data for error checking.

42. Claims 18, 19, 22 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ebrahim (5887134) in view of Gullede (5644623) in further view of Witkowski (6430626).

43. Referencing claim 18, as closely interpreted by the Examiner, Ebrahim teaches a router, comprising:

44. a bus, (e.g. col. 1, lines 36 – 48); and

45. a parallel processor coupled to the bus and comprising, (e.g. col. 1, lines 36 – 48);

46. a plurality of processing engines to process data transfers with a plurality of devices connected to the bus, (e.g. col. 15, lines 19 – 37);

Art Unit: 2143

47. the status data indicating readiness of the devices to participate in data transfers, (e.g. col. 5, line 65 – col. 6, line 14 & col. 11, line 36 – col. 12, line 17). Ebrahim does not specifically teach an interface connected to collect ready status data from the media access control devices and to automatically transfer ready status data the processing engines in response to the ready status data being collected, the ready status data comprising data indicating whether a one of the media access control devices has received packet data, and media access control device.

48. Gulleedge teaches an interface connected to collect status data from the devices and to automatically transfer status data the processing engines in response to the status data being collected, (e.g. col. 14, lines 44 – 63). It would have been obvious to one skilled in the art at the time the invention was made to combine Gulleedge with Ebrahim because it would be faster if the status was automatically transfer once the status data was collected. This could aid in the shortening of latency. Gulleedge does not specifically teach the ready status data comprising data indicating whether a one of the media access control devices has received packet data.

49. Witkowski teaches media access control device, (e.g. col. 50, lines 1 – 23), and

50. the ready status data comprising data indicating whether a one of the media access control devices has received packet data, (e.g. col. 20, line 45 – col. 21, line 28, “*The RX MCB interface 530 asserts a signal RX_PKT_AVAIL* to the MCB 404 when packet data is in one of the RX BUFS 520, 522...* ”). It would have been obvious to one skilled in the art at the time the invention was made to combine Witkowski with the combine system of Ebrahim and Gulleedge because of similar reasons as stated above in claim 1.

51. As per claim 19, Ebrahim and Gulleedge do not specifically teach wherein the ready status data indicates the readiness of individual ones of the devices to one of receive a data packet from and transmit a data packet to the parallel processor. Witkowski teaches wherein the ready status data indicates the readiness of individual ones of the devices to one of receive a data packet from and transmit a data packet to the parallel processor, (e.g. col. 20, line 45 – col. 21, line 28, “*The RX MCB interface 530 asserts a signal RX_PKT_AVAIL* to the MCB 404 when packet data is in one of the RX BUFS 520, 522...* ”). It would have been obvious to one skilled in the art at the time the invention was made to combine Ebrahim and Gulleedge with Witkowski because of similar reasons stated above and furthermore, it could lead to errors if the devices are not ready to transmit or receive data. This could prevent bottlenecking and packet collision.

52. As per claim 22, Ebrahim and Gulleedge disclose all that is described above but do not specifically teach a ready bus capable of transferring ready status data from the devices to the interface. Witkowski teaches a ready bus capable of transferring ready status data from the devices to the interface, (e.g. col. 20, line 45 – col. 21, line 28, “*The RX MCB interface 530 asserts a signal RX_PKT_AVAIL* to the MCB 404 when packet data is in one of the RX BUFS 520, 522...* ”). It would have been obvious to one skilled in the art at the time the invention was made to combine Witkowski with the combine system of Ebrahim and Gulleedge because an error could occur if the data on the bus is not ready to transfer from the device to the interface.

Art Unit: 2143

53. As per claim 26, Ebrahim teaches wherein the devices are capable of transmitting data packets between the bus and external networks, (e.g. col. 3, lines 7 – 28).

54. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ebrahim (5887134) in view of Gulledge (5644623) in further view of Witkowski (6430626) in further view of Vaidya (6279113).

55. As per claim 20, Ebrahim, Gulledge and Witkowski disclose all that is described above but do not specifically teach wherein the ready status data includes a time stamp indicative of a staleness of the ready status data. Vaidya teaches wherein the ready status data includes a time stamp indicative of a staleness of the ready status data, (e.g. col. 12, lines 11 – 22). It would have been obvious to one skilled in the art at the time the invention was made to combine Vaidya with the combine system of Ebrahim, Gulledge and Witkowski because if one desired to save an updated status data the comparisons of the time stamp would allow for this function to take place. Therefore, leading to possible error prevention from the system accessing obsolete information.

56. Claims 21 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ebrahim (5887134) in view of Gulledge (5644623) in further view of Witkowski (6430626) in further view of Isfeld (5592622).

57. As per claim 21, Ebrahim, Gulledge and Witkowski disclose all that is described above but do not specifically teach wherein a portion of the ready status data includes

information to enable the processing engines to identify which scheduled data transfers to the devices have been completed. Isfeld teaches wherein a portion of the ready status data includes information to enable the processing engines to identify which scheduled data transfers to the devices have been completed, (e.g. col. 2, line 65 – col. 3, line 23). It would have been obvious to one skilled in the art at the time the invention was made to combine Isfeld with the combine system of Ebrahim, Gulleedge and Witkowski because if the device does not know that the data transfer has been completed it could continually send the same data not knowing the status of the completely sent data, (i.e. acknowledgement signal). This would be used for error prevention.

58. As per claim 27, Ebrahim, Gulleedge and Witkowski disclose all that is described above but do not specifically teach wherein the interface transfers the collected status data without being solicited to transfer the data by the processing engines. Isfeld teaches wherein the interface transfers the collected status data without being solicited to transfer the data by the processing engines, (e.g. col. 23, line 45 – col. 24, line 15). It would have been obvious to one skilled in the art at the time the invention was made to combine Isfeld with the combine system of Ebrahim, Gulleedge and Witkowski because it would be more efficient if data that was more important was to be transferred first. Furthermore, it would be faster if the data that was transmitted were unsolicited because the data would not use up time in unnecessary processing.

59. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ebrahim (5887134) in view of Gulledge (5644623) in further view of Witkowski (6430626) in further view of Cotton et al. (5623489) (hereinafter Cotton).

60. As per claim 23, Ebrahim, Gulledge and Witkowski discloses all that is described above but do not specifically teach wherein the ready status data indicates whether associated ports of the devices are ready to perform one of a transmission of a data packet to the bus and a receive of a data packet from the bus. Cotton teaches wherein the ready status data indicates whether associated ports of the devices are ready to perform one of a transmission of a data packet to the bus and a receive of a data packet from the bus, (e.g. col. 9, lines 8 – 35). It would have been obvious to one skilled in the art at the time the invention was made to combine Cotton with the combine system of Ebrahim, Gulledge and Witkowski because if there are all ports are in use at the time the system cannot receive any data. Therefore, this would prevent bottlenecking and packet collision.

61. Claims 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ebrahim (5887134) in view of Gulledge (5644623) in further view of in further view of Witkowski (6430626) in further view of Vaidya (6279113) in further view of Cotton (6430626).

62. As per claim 24, Ebrahim, Gulledge, Witkowski and Vaidya discloses all that is described above but do not specifically teach wherein each processing engine comprises at least one input transfer register; and

Art Unit: 2143

63. the interface is configured to write ready status data to one of the input transfer registers assigned to a to scheduler thread. Cotton teaches wherein each processing engine comprises at least one input transfer register, (e.g. col. 10, lines 15 – 44); and

64. the interface is configured to write ready status data to one of the input transfer registers assigned to a to scheduler thread, (e.g. col. 10, lines 15 – 44). It would have been obvious to one skilled in the art at the time the invention was made to combine Cotton with the combine system of Ebrahim, Gulledge, Witkowski and Vaidya because it would be more efficient to write received ready status data to a status register and if one wanted to transfer a type of response to the status data (i.e. acknowledgement) it would be more efficient for to transfer a portion of the status data for error checking.

65. As per claim 25, Ebrahim, Gulledge, Witkowski and Vaidya discloses all that is described above but do not specifically teach wherein the interface is configured to protect one of the input transfer registers from being read by the processing engines during the transferring of ready status data thereto. Cotton teaches wherein the interface is configured to protect one of the input transfer registers from being read by the processing engines during the transferring of ready status data thereto, (e.g. col. 16, lines 30 – 59). It would have been obvious to one skilled in the art at the time the invention was made to combine Cotton with the combine system of Ebrahim, Gulledge, Witkowski and Vaidya because this would be a more efficient way to protect status data that does not need to be processed by the processing engines. Therefore, this could help prevent errors from occurring in the system.

Art Unit: 2143

66. Claims 28 – 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over

O'Loughlin et al. (6275505) (hereinafter O'Loughlin) in view of Witkowski (6430626) in further view of Isfeld (5592622).

67. As per claim 28, O'Loughlin teaches an article comprising a computer-readable medium which stores executable instructions for transferring data packets over a bus, the instructions causing a processor to, (e.g. col. 10, lines 20 – 33):

68. But, O'Loughlin does not specifically teach collect information on readiness of devices connected to the bus to one of transmit and receive data packets; and

69. transfer a portion of the collected information to a processing engine configured to schedule data transfers, the transferring being unsolicited by the processing engine.

Witkowski teaches information on readiness of devices, (e.g. col. 20, line 45 – col. 21, line 28, “*The RX MCB interface 530 asserts a signal RX_PKT_AVAIL* to the MCB 404 when packet data is in one of the RX BUFS 520, 522...*”), and the devices connected to

the bus to one of transmit and receive data packets, (e.g. col. 23, lines 14 – 47 & col. 24, lines 13 – 43). It would have been obvious to one skilled in the art at the time the

invention was made to combine Witkowski with O'Loughlin because it would be more efficient to transmit and receive data when the devices is ready. If the device is not ready it could receive or transmit incorrect data leading to errors. Isfeld teaches transfer a

portion of the collected information to a processing engine configured to schedule data transfers, the transferring being unsolicited by the processing engine, (e.g. col. 23, line 45 – col. 24, line 15). It would have been obvious to one skilled in the art at the time the

invention was made to combine Isfeld with the combine system of O'Loughlin and

Witkowski because it would be more efficient if data that was more important was to be transferred first. Furthermore, it would be faster if the data that was transmitted were unsolicited because the data would not use up time in unnecessary processing.

70. As per claim 29, O'Loughlin and Isfeld discloses all that is described above but do not specifically teach the instructions further causing the processor to:

71. schedule data transfers with a portion of the devices based on the transferred portion of the collected information. Witkowski teaches the instructions further causing the processor to:

72. schedule data transfers with a portion of the devices based on the transferred portion of the collected information, (e.g. col. 17, lines 33 – 58 & col. 34, line 45 – col. 35, line 25). It would have been obvious to one skilled in the art at the time the invention was made to combine Witkowski with the combine system of O'Loughlin and Isfeld because of similar reasons stated above.

73. As per claim 30, O'Loughlin and Isfeld discloses all that is described above but do not specifically teach the instructions further causing the processor to:

74. determine whether the transferred information is at least partly new; and

75. wherein instructions causing the processor to schedule are performed in response to determining that the transferred information being at least partly new. Witkowski teaches the instructions further causing the processor to:

76. determine whether the transferred information is at least partly new, (e.g. col. 17, line 33 – col. 18, line 36); and

77. wherein instructions causing the processor to schedule are performed in response to determining that the transferred information being at least partly new, (e.g. col. 17, line 33 – col. 18, line 36). It would have been obvious to one skilled in the art at the time the invention was made to combine Witkowski with the combine system of O'Loughlin and Isfeld because it would be more efficient for the user to determine the difference between partly new information and old information. This could lead to knowing when to update information in the system.

78. Claims 31 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Isfeld (5592622) in view of Chilton (6418488) in further view of Witkowski (6430626) in further view of Adler et al. (6552826) (hereinafter Adler).

79. As per claim 31, Isfeld and Witkowski teaches all that is discussed above but does not specifically teach the processing engines schedule the transfer of data packets independently of the module collecting status data from the devices. Adler teaches the processing engines schedule the transfer of data packets independently of the module collecting status data from the devices, (e.g. col. 18, line 18 – col. 20, line 42). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Adler with the combines system of Isfeld and Witkowski for it is more efficient in terms of faster transmission with low latency from a small overhead that is utilized in a connectionless network system. This function is utilize in User Datagram Protocol, (UDP), having small overhead and does not use system acknowledgements in a network as opposed to a network protocol that has more overhead in the header that would slow down the transmission of packets.

80. As per claim 32, Isfeld and Witkowski teaches all that is discussed above but does not specifically teach the processing engines schedule the transfer of data packets from a device to the bus independently of the readiness of other devices to receive the data, and schedule the transfer of data from the bus to a device independently of the readiness other devices to send the data. Adler teaches the processing engines schedule the transfer of data packets from a device to the bus independently of the readiness of other devices to receive the data, and schedule the transfer of data from the bus to a device independently of the readiness other devices to send the data, (e.g. col. 18, line 18 – col. 20, line 42). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Adler with the combines system of Isfeld and Witkowski for it is more efficient in terms of faster transmission with low latency from a small overhead that is utilized in a connectionless network system. This function is utilize in User Datagram Protocol, (UDP), having small overhead and does not use system acknowledgements in a network as opposed to a network protocol that has more overhead in the header that would slow down the transmission of packets.

Conclusion

81. Applicant's arguments with respect to claims 1 – 37 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David E. England whose telephone number is 703-305-5333. The examiner can normally be reached on Mon-Thur, 7:00-5:00.

Art Unit: 2143

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David A. Wiley can be reached on 703-308-5221. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

David E. England
Examiner
Art Unit 2143

De 



DAVID WILEY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100